Han-Jung Lee

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<https://scholar.google.com/citations?user=-tTkfCYAAAAJ&hl=zh-TW&oi=sra>

**PROFESSIONAL SUMMARY**

* Entomologist with over 5 years experiences in the tri-trophic researches with cabbage, generalist and specialist caterpillars and parasitoids; 5 years in MS technologies with bacteria, fungi, honeybee and scale insects; 4 years in insecticide resistance researches with mosquito.
* Trained to perform wet-lab techniques and field works, including field and lab bioassays, various MS technologies, and molecular biology skills.
* Published 5 manuscripts in peer-reviewed journals.
* Present 10 oral and 5 poster presentations in conferences.
* Write 16 reports and present 7 oral presentations for the project under CDC Center of Excellence.
* Collaborated with the director, supervisors and staff at Harris County Public Health and with colleagues with different scientific training backgrounds.
* Received 7 awards with in total 349,923 USD during Ph.D. study.

**EDUCATION**

**Texas A&M University**, College Station, Texas  **Sep. 2018-Present**

*Ph.D. in Entomology* **Expected graduation time: Aug. 2023**

**National Chung Hsing University**, Taichung, Taiwan **Sep. 2011-Jun. 2013**

*M.Sc. in Entomology*; GPA: 4.0

**SKILLS**

Insect colonies collection and maintenance: mosquito, caterpillar, parasitoid.

Molecular biology: PCR, Gel electrophoresis, qRT-PCR, Nanopore sequencing (MinION).

MS Tech: GC/MS (ESI), HPLC, UPLC, MALDI-TOF and MALDI-MSI.

Extraction and quantification of metabolites.

Bioassays: Insect growth and development, probit analyses, microbial culture, cell culture.

Software: Benchling, GraphPad Prism, R, DNAStar, Sigma plots, ArcMap, QGIS, Epi2Me.

**WORK EXPERIENCES**

## **Texas A&M University,** College Station, Texas **Sep. 2018-Present**

## Graduate Assistant

* Developed an allele-specific PCR and designed primers for sanger sequencing to detect the *kdr*-like mutation (L1014F) in the voltage-gated sodium channel of *Culex quinquefascitus* (N=1,028).
* Developed a method to collect Permanone® 31-66 (31% permethrin and 66% PBO) incorporating in the field cage assay workflow performed by Harris County Public Health to quantify pesticide deposited during the field cage assay.
* Performed lab probit analyses to estimate the resistance ratios of field *Culex quinquefasciatus* populations.
* Maintained Sebring susceptible strain and field collected *Culex quinquefasciatus* in the lab.
* To detect pyrethroid resistance associated SNPs, 4 sets of primers were designed, based on the NCBI database, to amplify pyrethroid receptor site I and II encoded regions in the gDNA of voltage-gated sodium channel in the *Culex quinquefasciatus* mosquito populations.
* Collaborate with lab members with diverse culture for general lab maintenance, including arranged lab and office supplies order, equipment order and maintenance, environmental cleanness.
* Supervised 3 undergraduate student workers.
* Practiced fluorescent and bioluminescence cell assays.

## **Academia Sinica,** Taipei, Taiwan  **Sep. 2013-Jun. 2018**

## Research Assistant

* Isolated microbes from honeybee’s gut and screened for antagonistic fungi and bacteria to pathogens.
* Dual plate assay for antagonistic bacteria and bacterial and fungal pathogens.
* Extracted bioactive natural products for LC/MS, HPLC and UPLC, including bacterial polyynes and cyclic lipopeptides empedopeptins from bacteria cultured on various media.
* Inhibition of spore germination bioassay with isolated natural products.
* Revealed vinca alkaloid and plant growth regulators distribution within plants by MALDI-MSI.
* Extracted and identified scale insect sex pheromone by GC/MS, and verified the synthetic sex pheromone with a bioassay.

## **National Chung Hsing University,** Taichung, Taiwan  **Sep. 2011-Jun. 2013**

## Graduate Assistant

* Maintained cabbage in green house, generalist and specialist caterpillars in the lab, and parasitoids of the two herbivore species.
* Analyses of plant’s secondary metabolites, e.g., sinigrin and trypsin inhibitors, and total protein content.
* Performed caterpillars and parasitoids’ growth and development bioassays

**LEADERSHIP**

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| **2022 Aggie Women in Entomology (AWE) annual symposium**  | **Apr. 2022-Nov. 2022** |

## Organizer

* Collaborate with organizers to write the symposium proposal, invite speakers, set up schedule, and hold the symposium in person in Vancouver.

## **Texas Taiwanese Biotechnology Association (TTBA) Feb. 2021– Apr. 2022**

## Co-Chair

* Collaborate with co-chair to write proposal and with board members to hold 4 webinars and 1 annual meeting.

## **Aggie Women in Entomology (AWE) Apr. 2021– Apr. 2022**

## Director of Finance

* Collaborate with board members to hold events and write proposal for funding.

**HONORS and AWARDS**

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| **Departmental matching fund for 2022 Joint Annual Meeting of Entomological Society of America** | **Nov. 2022** |

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| **Suzanne ’76 & James M. (Mark) Ivey ’74 scholarship** | **Sep. 2022-May.2023** |

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| **2022-2023 American Association of University Women (AAUW) International Fellowship** | **Jul. 2022-Jun. 2023** |

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| **Graduate & Professional School’s Graduate Student Organization (GSO) Professional Development Innovation Mini-Grant** | **Apr. 2022-Jul. 2022** |

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| **2022 Overseas Conference Grant from the Ministry of Science and Technology, Republic of China (Taiwan)** | **Feb. 2022-Dec. 2022** |

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| **2nd place in 10-min student competition at 2021 ESA annual meeting** | **Nov. 2021** |

* On demand oral presentation in the session of MUVE: Ecology, Vector Surveillance and Other in 2021 Entomological Society of Association annual meeting.

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| **AgriLife Research Strategic Initiative Assistantship**  | **Sep. 2018-Aug. 2021** |